Mathematicians and physicists have long sought an answer how to calculate with the infinite value(s) depicted by the symbol "horizontal eight" or ∞.

I watched documentary A Trip to Infinity (2022.) and decided to fathom certain misconcepts present in it.

At the start of this documentary, version of the Hilbert's paradox of the Grand Hotel is explained. Basically, the problem is paradox by itself: imagine the hotel with an infinite number of rooms, which can accomodate an infinite number of guests, but the subsequent conclusion is that there is no infinity. If there is no infinity then how can you imagine it in a first place? I offer counter-example: imagine an elephant which does not look like one. Voila! We have proven that elephants do not exist as such. Silly, just like Hilbert's paradox. There is no sense at all. They say, imagine "countably infinite number of rooms, all of which are occupied". Countably infinite? What are you talking about? Infinity which can be occupied? Hello? Reality check please.

Next, Eugenia Cheng and Moon Duchin, mathematicians, state as follows:

1) If you divide one with 2, 4, 8, 16, etc. to the infinity and then sum it all you will get one. 1/2 + 1/4 + 1/8 + 1/16 +... = 1. Meaning, infinity equals one.

No! Only the specific subsection of the infinity equals one while infinity has infinite number of subsections.

2) If you add one to infinity it still equals infinity, right?

$1 + \infty = \infty$

If we subtract infinity on both sides we get $1 = 0$.

Meaning, 1 equals 0.

Therefore, an infinity is absurd.

NO! If you can add 1 then you didn`t have infinity to start with. You can not add any amount to the infinity. You can only add to the infinity minus X, in our case 1. Then 1 and -1 mutually neutralize giving result of infinity equaling infinity.

$$1 + \infty - 1 = \infty$$

$$\infty = \infty$$

Otherwise, the result is an infinity plus one. If you deduct infinity on both sides then you get one equals one or if you deduct one on both sides you get infinity equals infinity meaning an infinity concept is not absurd.

$$1 + \infty = \infty + 1$$

$$1 = 1$$

$$\infty = \infty$$

3) If you add an infinity to an infinity the result is an infinity. By subtracting infinity on both sides you get infinity equals zero.

$$\infty + \infty = \infty$$

$$\infty = 0$$

NO!!!!! What a horse... radish.

If you add an infinity to an infinity the result is also an infinity plus an infinity. Or, abbreviated, 2x (two times) an infinity. If you deduct an infinity on both sides then you get infinity equals infinity or if you deduct both infinities on each side you get zero equals zero.

$\infty + \infty = \infty + \infty = 2x\ \infty$

$\infty = \infty$

$0 = 0$

4) If we take a triangle and gradually add corners we get more sides with smoother line curvature straightening the circumference. Eventually, we get a perfect circle without any (visible) angle. Meaning, infinity (infinite angles) equals zero (no angles).

Maybe, you will never truly straighten the circle. You will just make it appear more round. Infinity is a never reached potential.

Draw a triangle. It has 3 corners (angles).

Draw a second triangle opposite to the first, partially overlaying. Now we have 6 corners.

Draw a third triangle with different positioning than first two, partially overlaying. Now we have 9 corners.

Repeat the sequence indefinitely: either in the same manner, by adding 3, or exponentially ("+ 6", "+ 9" or "+ 12") to speed up the process, until you get a perfect circle.

0 + 3, 3 + 3, 6 + 3, 9 + 3, 12 + 3, 15 + 3, 18 + 3, 21 + 3, 24 + 3,... n + 3... ∞

My illustration:

triangleadd.jpg (799×602) (jwwb.nl)

In the documentary, they suggest how an infinite number of angles in a perfect circle equals zero angles. They practically postulate that infinity equals nothing.

Following the mirror logic, if x equals y then it is vice versa as well: y equals x. Meaning, zero angles equals an infinite number or nothing equals an infinity.

No. Their postulate is wrong.

Perfect circle has an infinite number of corners (angles). Not zero. It is an infinity. Not nothing.

How many corners does a simple dot have? Zero (0). None.

How many corners does a simple line have? Zero (0). None.

How many corners does "V" form have? One (1). Single.

How many corners does "X" form have? Two (2). Binary.

How many corners does a triangle have? Three (3). Trinity.

Following the mirror logic, they are suggesting that a simple dot and a single line, by having no corners (0) actually have an infinite number of corners (∞). As well as that a "V", "X" and a triangle form have more angles than a perfect circle which has an infinite number of angles.

Implication is that a perfect circle and a simple dot both have an infinite number of angles and zero angles at the same time.

The only thing that seems paradoxical is their thinking. Unless indeed, an end means a new beginning. If you reach an infinity, which is impossible, then you arrive at the start. Perfect circle becomes a simple dot again. Remember that when you start drawing a circle you begin with a simple dot.

You will never absolutely straighten the circle. You will just make it appear more round. Infinity is a never reached potential.

What do they claim? They claim that an infinity can be reached. How can an infinity be reached, even hypothetically, when the very term means what is "intangible, elusive, unreachable".

Imagine something that is infinite (intangible, elusive, unreachable) but also imagine that we can seize it. It is a paradox in the premises. If there is a paradox in the premises than the conclusion must be paradoxical too. Their thinking is illogical, their postulate is wrong.

Truth is that if we ever reach an infinity then the reality breaks down. Everything and anything is possible then. Yes, in that case, a perfect circle can become a simple dot again. But tell me, wise documentary heads, how will you reach an infinity, by adding angles to the object, even hypothetically? Because if you do then it wasn`t an infinity to start with. This

applies for the Hilbert's paradox of the Grand Hotel and the documentary version or any other version as well.

5) If we take small and big circle, for example having radius one cm and billion cm respectively, we can draw lines connecting each dot on both circles matching every radius with its longer counterpart.

You are suggesting that circumference of the smaller and bigger circle is the same? Stupidity.

What is a circumference? It is a linear perimeter around the center of the circle having equal lenght connecting each dot of the perimeter with the middle point.

$c = 2 \times \pi \times r$

c - circumference

pi - constant

r - radius

Small circle has small radius, big circle has big radius. Circumference is dependent, proportional meaning you can not connect each dot of the small and big circle mutually. On big circle you will have empty space in between the lines.

6) If you sum 1+2+3+... + n and you divide 1 into the decimals it seems that segment, continuously fractioned ad infinitum, is an infinity in an infinity.

No. You can divide only to the Planck size. Hypothetically, if we divide further we still have one (1) as predetermined quantity. It does not mean one equals infinity. It means it can divide infinitely.

Let us find examples of an infinity in the real life.

There are abstract infinities like one split into a three perfectly equal parts. It is impossible since 1 / 3 = 0.33333 -> ∞

I tried using Bing online calculator.

1 : 3 (or 1 / 3) = 0.333333333333

But!!!

Reverse,

0.333333333333 x 3 (multiplied with 3) = 0.999999999999

Not 1.

The digit 3, decimal three, continues ad infinitum.

Another example of abstract infinity is constant Pi (π) which depicts the ratio of a circle's circumference to its diameter, approximately equal to 3.14.

Basic formula: π = c / d

π - constant Pi

c - circumference

d - diameter

Although, there are much more subtle ways for calculating Pi like using Machin's Formulas, Gregory and Leibniz account, Riemann zeta function, Newton`s calculus or Ramanujan generator which are all actually an

algorithms for extraction of the Pi digits.

Numbers like Pi, Euler's e, the Golden ratio φ or all square roots of natural numbers other than perfert squares are called an irrational numbers meaning they can`t be expressed as a ratio of the two integers.

Record for saying the most digits of Pi is held by the Suresh Kumar Sharma, from India, who spoked Pi to 70.030 decimals in the year 2015. Some computer programs have calculated the value of Pi to the precision of almost 63 trillion digits.

Great example of an abstract infinity is the Mandelbrot set or fractal curvature producing more and more complex numbers in both directions. There is a great documentary titled "The Colours of Infinity" (1995.) made by famous Arthur C. Clarke in which Stephen Hawking and Benoît B. Mandelbrot explain the beauty of the Mandelbrot set where iteration of the function C (Z) = Z2 + C creates new, similar shapes over and over again, two-ways without an end.

Mobius band (strip) is an excellent example of the real infinity. It resembles Einstein`s view of closed Universe and proves my theorem how an undetermined (an undefined) equals an infinite.

You can go as much as you want in any of the two straight directions and you will never reach the end because pathway repeats indefinitely. It even looks like symbol for an infinity.

Is it possible to produce the perfect Mobius lane? Yes, says Einstein. It is closed Universe in which we return to the starting position after traveling for indefinitely long period of time. Talking about spooky?

I am searching for this two movies:

Möbius (Matti Geschonneck, 1993.)

Moebius (Gustavo Mosquera R., 1996.)

In a documentary "Is God a Number?" (1999.) Roger Penrose, Nobel winning mathematician, distinguishes three layers of the reality: mathematical, physical and mental.

Second real infinity is related to the mental sphere.

In a documentary "Bufo Alvarius" dr. Stanislav Grof, Czech psychiatrist living in the USA and one of the founders of the transpersonal (spiritual) psychology, reveals actual experiences induced by 5-MeO-DMT, the strongest known natural psychedelic produced in the glands of the Sonoran Desert toad. Student of a Freudian psychoanalysis, his early professional work explored usage of the LSD in the psychedelic therapy and its effects on the human psyche but also researched Otto Rosenfeld`s ideas.

Dr. Grof separates two modes of consciousness: hylotropic ("name and form" or personal lower self) related to an everyday awareness of yourself and holotropic (Hindu concept of Atman-Brahman) experienced during meditation, mystic seances or under influence of the psychedelics.

I will cite what has one test subject answered when being asked about his latest, scientific, "involvement" with the Dimethyltryptamine: "You just can not prepare for that... You experience truth, the essence, an entire Universe...

You experience the moment which lasts forever". Second test subject said: "I was light that became everything, an absolute unity of all things, an infinity".

I must comment that a mental infinity of this sort, meaning artificially induced, is just an individual experience, a personal introspective, an intimate impression, a local phenomenon, an illustration of the limitless. Not a real infinity. Otherwise the subjects wouldn`t return as themselves, humans, mortals but as a higher beings at least able to repeat the process naturally.

Watch this two photos:

mandelbrot-set.jpg (800×1066) (jwwb.nl)

Mandelbrot set

atman-brahman.jpg (800×851) (jwwb.nl)

Atman-Brahman

Is God a number? If yes, it is a very special, complex number. A set of the very special, complex numbers stretching fractally to an infinity and transcending even beyond the conceivable.

This view is not all original because Gottfried Wilhelm Leibniz, Enlightenment period German mathematician and philosopher, already some 300 years ago proposed that a conscious mental activity takes place on the higher levels of the awareness separated from an unconsciousness by a realization degree.